

NOTES ON BLUE-EARED GLOSSY STARLINGS *LAMPROTORNIS CHALYBAEUS*

AT NAKURU, KENYA

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In the course of a study on the physiological control of breeding in Blue-eared Glossy Starlings *Lamprotornis chalybaeus* at Lake Nakuru National Park (20 000 ha), some interesting findings emerged on the size and structure of the population. These, together with basic data on the timing of breeding and moult, are summarized in this paper.

The Nakuru study lasted for two years, from February 1981 to February 1983, during which over 450 individuals were caught and ringed. Periodic censuses were made of the park population, during which the locations of flocks and individual birds were noted.

DETERMINATION OF AGE AND SEX

The sex of birds caught and ringed was determined by laparotomy. First year birds were easily recognized by the yellow colour of the inside of their mandibles, which darkened with age and disappeared at about 14 months. The golden eye colour took four to five months to develop fully in young birds. Weights and winglengths of birds in different age and sex categories are summarized in Table 1.

TABLE 1

Weights and winglengths of Blue-eared Glossy Starlings caught in Lake Nakuru NP

	Males				Females			
	n	Median	Quartiles	Range	n	Median	Quartiles	Range
Adults								
Weight (g)	191	94	91/97	79-106	109	79	76/83	66-96
Wing (mm)	191	149	147/152	136-157	109	136	134/138	126-146
Juveniles								
Weight (g)	63	90	86/96	76-104	52	78	74/82	60-99
Wing (mm)	63	140	138/142	130-151	52	131	128/135	122-140

Females tended to be smaller than males as has been described by Mackworth-Praed & Grant (1957), and first year birds had shorter wings than adults. Provided age was taken into account, most Blue-eared Glossy Starlings could in fact be sexed with confidence on the basis of weight and winglength.

NUMBERS, BEHAVIOUR, AGE/SEX RATIOS

As shown in Table 2, there were major fluctuations in numbers, but the total population of Blue-eared Glossy Starlings was at times estimated to be as high as 800 birds. Two distinct classes of birds were recognized during the study. Some pairs remained in territories all the year round; twelve such pairs in all were known in the study area. The majority of birds, however, occupied territories only when breeding, and otherwise formed wandering groups of up to about 300 individuals. The larger groups began to congregate in June, after breeding, and reached a peak in August. Benson & Benson (1977) made the same

TABLE 2

Monthly numbers of Blue-eared Glossy Starlings censused (1982)
and percentage of juveniles in catches (1981 and 1982
data combined) in Lake Nakuru NP

	J	F	M	A	M	J	J	A	S	O	N	D
Censused (1982)	150	650	650	400	350	400	350	800	600	200	90	80
No. of birds caught (1981/82)	15	73	49	17	54	28	20	45	71	22	16	18
Percentage of juveniles in catches	53	34	24	35	2	25	30	22	30	50	81	66

observation on the species in Malawi. The structure of the Nakuru flocks was quite flexible, as they appeared to split up into smaller groups and reform from day to day or even within the course of the same day. The flocks often congregated around food sources such as the rubbish pits at the lodges or patches of fruiting trees or bushes.

One surprising finding was that there seemed to be a mass exodus of birds during October-November, and numbers were very low from late November to early January (Table 2). During December of both 1981 and 1982 the overall population was estimated to be less than 80 birds and no large groups were present. Numbers began to build up again from mid January in both years, until at the onset of the long rains they broke up and dispersed in pairs around the park. Where the flocks had gone to from November to January is difficult to say. A few excursions were made in various directions from Nakuru during that period, to the Mau and Kikuyu escarpments, towards Naivasha and Lake Bogoria and to the Kinangop plateau. They produced the same results: only a few birds were seen and no large flocks were found. This would imply that the seasonal exodus of Blue-eared Glossy Starlings was not merely a local Nakuru phenomenon, but a reflection of a more general movement. Similar dry season migrations have been described for the Lesser Blue-eared Glossy Starling *L. chloropterus* (Wells & Walsh 1969) and the Splendid Glossy Starling *L. splendidus* (Elgood, Fry & Dowsett 1973) in Nigeria.

The population which remained at Nakuru during November-January consisted of the few resident pairs which occupied territories all the year round, together with juvenile birds. The contribution of juveniles to total monthly catches increased from 20-30 per cent during June-August (shortly after the main breeding period) to 81 per cent in November and 66 per cent in December (Table 2). The seasonal exodus of young birds was evidently less complete than that of adults. There was a preponderance of males over females amongst the birds caught, which was more marked in adults than in juveniles. This was presumably a reflection of either a higher mortality rate in females or a higher dispersal rate.

TIMING OF MOULT AND BREEDING

Forty-eight breeding records (birds feeding nestlings) were collected over the two years (Table 3). The bulk (33) of these were associated with the long rains in April, May or June. There were 12 records from July-August, and one each in September, October, December and January. The nesting site was always in a hole or cavity in a dead tree or in a pole. However, the choice of breeding habitat was seasonally dependent. Thirty-one of the long rains breeding pairs were found in open savanna, and only two pairs in acacia forest. By contrast, breeding from July to January was restricted to acacia forest, and off season breeders apparently utilized an ostensibly more stable environment.

In contrast with other *Lamprotornis* species (Craig 1983), no co-operative breeding was seen in this species.

Breeding was always followed in individuals by a complete moult, beginning two to six weeks after young were hatched. No breeding birds (i.e. feeding at the nest) were found to have any primary moult. This contrasts with reports by Payne (1969) and Foster (1975) but is consistent with many other results (see Britton 1978 for a review). The incidence of post-nuptial flight feather moult was high (over 80 per cent) in adult birds present at Nakuru from July through to November (Table 3). Juveniles went through a complete body moult contemporaneous with the adult moult, but their flight feathers were not replaced until the second year of life.

TABLE 3

Monthly numbers of breeding records and incidence of flight feather moult (1981 and 1982 data combined) of Blue-eared Glossy Starlings in Lake Nakuru NP

	J	F	M	A	M	J	J	A	S	O	N	D
Savanna nests	0	0	0	3	24	4	0	0	0	0	0	0
Forest nests	1	0	0	0	2	0	8	4	1	1	0	1
Percentage of adults caught showing flight feather moult	5	8	2	0	22	40	80	96	92	80	96	6

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